UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/876,160	06/08/2001	Masaharu Ikeda	20402/0625	6709

7590 06/02/2005

Connolly Bove Lodge & Hutz LLP
Suite 800
1990 M Street, N.W.
Washington, DC 20036-3425

EXAMINER	
CHAU, COREY P	

ART UNIT	PAPER NUMBER
2644	

DATE MAILED: 06/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/876,160	IKEDA, MASAHARU	
	Examiner	Art Unit	
	Corey P. Chau	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 1, 8, and 11 are objected to because of the following informalities: on line 15 in Claims 1 and 8 and on line 17 in Claim 11, recites "putout terminal", which should be replaced with "output terminal". Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 2, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4491697 to Tanaka et al (hereinafter as Tanaka) in view of U.S. Patent No. 4443666 to Cote and further in view of U.S. Patent No. 6084972 to Halteren et al. (hereafter as Halteren).

4. Regarding Claim 1, Tanaka discloses a capacitor type of microphone (i.e. condenser microphone) having a microphone output terminal (Fig. 1) connected to an output line through which a microphone signal is outputted, the microphone comprising movable electrode (i.e. one conductive vibrating plate) vibrating in response to a sound vibration; one fixed electrode arranged face to face with the movable electrode (abstract; Fig. 1); a first amplification means (201,202); and

second amplification means (206) cascaded to the first amplification means between an output terminal of the first amplification means and a microphone output terminal (abstract; Fig. 1). Tanaka does not expressly disclose a member for shielding the microphone from electromagnetic waves. However it would have been obvious to one having ordinary skill in the art to provide a member for shielding the microphone comprising the movable electrode, the fixed electrode, the first amplification means, and the second amplification means in order to avoid external electromagnetic interference as taught by Cote. Cote disclose a capacitor microphones in which a permanently polarized dielectric, or electret, is used requires a local preamplifier circuit because of their low output which must be well shielded to avoid external electromagnetic interference (column 1, lines 6-16; column 1, line 67 to column 2, line 5; column 2, lines 43-68). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Tanaka with the teaching of Cote to shield the microphone comprising the movable electrode, the fixed electrode, the first amplification means, and the second amplification means in order to avoid external electromagnetic interference.

Tanaka as modified does not expressly disclose a bypass capacitor having one end electrically connected to a signal output terminal of the second amplifying means and having to the other end electrically connected to a common output terminal of the second amplifying means, the bypass capacitor operating to bypass high frequency signal from outside the microphone and the signal output terminal of the second amplifying means being connected to the

microphone output terminal. However it would have been obvious to one having ordinary skill in the art to utilize a bypass capacitor across output terminals of the microphone in order to produce an output free of interference because at high frequency the capacitor would acts as a short circuit, which will not allow signals to pass and at low frequency the capacitor acts as a open circuit, which will allow signals to pass, as taught by Halteren. Halteren discloses if high frequency interference signals may be generated, these signals are short-circuited to ground by the capacitive coupling. Thus, the signal that can finally be derived at the output is free of such interference signals (Fig. 1A; column 3, lines 24-41). Therefore it would have been obvious to one having ordinary skill in the art to modify Tanaka as modified with the teaching of Halteren to utilize a capacitor across the output terminals (211,212,213) in order to produce a signal free of interference (i.e. a bypass capacitor having one end electrically connected to a signal output terminal of the second amplifying means and having to the other end electrically connected to a common output terminal of the second amplifying means, the bypass capacitor operating to bypass high frequency signal from outside the microphone and the signal output terminal of the second amplifying means being connected to the microphone output terminal) because at high frequency the capacitor would acts as a short circuit and at low frequency the capacitor acts as a open circuit.

5. Regarding Claim 8, Tanaka discloses a capacitor type of microphone (i.e. condenser microphone) having a microphone output terminal (Fig. 1) connected to an output line through which a microphone signal is outputted, the microphone

comprising movable electrode (i.e. one conductive vibrating plate); one fixed electrode arranged opposite to the vibrating plate (abstract; Fig. 1); a first amplification circuit (201,202); and second amplification circuit (206) cascaded to the first amplification circuit between an output terminal of the first amplification circuit and a microphone output terminal (abstract; Fig. 1). Tanaka does not expressly disclose a member for shielding the microphone from electromagnetic waves. However it would have been obvious to one having ordinary skill in the art to provide a member for shielding the microphone comprising the movable electrode, the fixed electrode, the first amplification circuit, and the second amplification circuit in order to avoid external electromagnetic interference as taught by Cote. Cote disclose a capacitor microphones in which a permanently polarized dielectric, or electret, is used requires a local preamplifier circuit because of their low output which must be well shielded to avoid external electromagnetic interference (column 1, lines 6-16; column 1, line 67 to column 2, line 5; column 2, lines 43-68). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Tanaka with the teaching of Cote to shield the microphone comprising the movable electrode, the fixed electrode, the first amplification circuit, and the second amplification circuit in order to avoid external electromagnetic interference.

Tanaka as modified does not expressly disclose a bypass capacitor having one end electrically connected to a signal output terminal of the second amplifying circuit and having to the other end electrically connected to a common

output terminal of the second amplifying circuit, the bypass capacitor operating to bypass high frequency signal from outside the microphone and the signal output terminal of the second amplifying circuit being connected to the microphone output terminal. However it would have been obvious to one having ordinary skill in the art to utilize a bypass capacitor across output terminals of the microphone in order to produce an output free of interference because at high frequency the capacitor would acts as a short circuit, which will not allow signals to pass and at low frequency the capacitor acts as a open circuit, which will allow signals to pass, as taught by Halteren. Halteren discloses if high frequency interference signals may be generated, these signals are short-circuited to ground by the capacitive coupling. Thus, the signal that can finally be derived at the output is free of such interference signals (Fig. 1A; column 3, lines 24-41). Therefore it would have been obvious to one having ordinary skill in the art to modify Tanaka as modified with the teaching of Halteren to utilize a capacitor across the output terminals (211,212,213) in order to produce a signal free of interference (i.e. a bypass capacitor having one end electrically connected to a signal output terminal of the second amplifying circuit having to the other end electrically connected to a common output terminal of the second amplifying circuit, the bypass capacitor operating to bypass high frequency signal from outside the microphone and the signal output terminal of the second amplifying circuit being connected to the microphone output terminal) because at high frequency the capacitor would acts as a short circuit and at low frequency the capacitor acts as a open circuit.

6. Regarding Claim 2, Tanaka as modified discloses DC power supply connected to the drains of the first and second field effect transistor; first and second impedance elements connected between gates of field effect transistors and ground to hold the DC potential of each gate at ground level (i.e. second amplification circuit includes drive means, in which a power supply to the drive means is configured so that the power is obtained as a constant current from outside the microphone via the output line connected to the microphone output terminal)(column 1, line 62 to column 2, line 10).

7. Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4491697 to Tanaka in view of U.S. Patent No. 4443666 to Cote as applied to claims 1, 2 and 8 above, and further in view of U.S. Patent No. 6104818 to Korner and U.S. Patent No. 6084972 to Halteren.

8. Regarding Claim 9, Tanaka as modified discloses a second amplification circuit (206), but it would have been obvious to one having ordinary skill in the art to utilize any equivalent second amplification circuit that would produce the same result. Korner for example, discloses a transistor that might also consist of a field effect transistor (Fig. 3; column 2, lines 30-46). It would have been obvious to one having ordinary skill in the art to employ any know equivalent second amplification circuit that would produce the same result, such as that of Korner. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Tanaka with the teaching of Korner to utilize a FET as the second amplification circuit. Therefore the second

amplification circuit has an FET structured into a gate-common amplification circuit (i.e. the gate is maintained at ac common), the FET having a source electrode receiving an output current of the first amplification circuit and current from a drain electrode of the FET passing to the microphone output terminal.

9. All elements of Claim 10 are comprehended by Claim 9. Claim 10 is rejected for the reasons stated above apropos to Claim 9.

10. Claim 11 is essentially similar to Claims 1 and 9 and is rejected for the reasons stated above apropos to Claims 1 and 9. The FET of Korner is structured into a gate-common, wherein the gate is maintained at ac common, therefore the gate is grounded.

11. Claim 12 is essentially similar to Claim 2 as is rejected for the reasons stated above apropos to Claim 2.

12. Claim 13 is essentially similar to Claim 9 and is rejected for the reasons stated apropos to Claim 9.

13. Claims 1, 3, 4, 5, 6, 7, 8, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6104818 to Korner in view of U.S. Patent No. 4443666 to Cote and further in view of U.S. Patent No. 6084972 to Halteren.

14. Regarding Claim 1, Korner discloses a capacitor type of microphone having a microphone output terminal connected to an output line through which a microphone signal is outputted, the microphone comprising: a movable electrode (22); a fixed electrode (24) arranged face to face to the movable electrode; first

amplification means (20); and second amplification means (18) cascaded to the first amplification means between an output terminal of the first amplification means and a microphone output terminal (Fig. 3; column 3, lines 6-15). Korner does not expressly disclose a member for shielding the microphone from electromagnetic waves. However it would have been obvious to one having ordinary skill in the art to provide a member for shielding the microphone comprising the movable electrode, the fixed electrode, the first amplification means, and the second amplification means in order to avoid external electromagnetic interference as taught by Cote. Cote disclose a capacitor microphones in which a permanently polarized dielectric, or electret, is used requires a local preamplifier circuit because of their low output which must be well shielded to avoid external electromagnetic interference (column 1, lines 6-16; column 1, line 67 to column 2, line 5; column 2, lines 43-68). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Korner with the teaching of Cote to shield the microphone comprising the movable electrode, the fixed electrode, the first amplification means, and the second amplification means in order to avoid external electromagnetic interference.

Korner as modified does not expressly disclose a bypass capacitor having one end electrically connected to a signal output terminal of the second amplifying means and having to the other end electrically connected to a common output terminal of the second amplifying means, the bypass capacitor operating to bypass high frequency signal from outside the microphone and the

signal output terminal of the second amplifying means being connected to the microphone output terminal. However it would have been obvious to one having ordinary skill in the art to utilize a bypass capacitor across output terminals of the microphone in order to produce an output free of interference because at high frequency the capacitor would acts as a short circuit, which will not allow signals to pass and at low frequency the capacitor acts as a open circuit, which will allow signals to pass, as taught by Halteren. Halteren discloses if high frequency interference signals may be generated, these signals are short-circuited to ground by the capacitive coupling. Thus, the signal that can finally be derived at the output is free of such interference signals (Fig. 1A; column 3, lines 24-41). Therefore it would have been obvious to one having ordinary skill in the art to modify Korner as modified with the teaching of Halteren to utilize a capacitor across the output terminals (Fig. 3) in order to produce a signal free of interference (i.e. a bypass capacitor having one end electrically connected to a signal output terminal of the second amplifying means and having to the other end electrically connected to a common output terminal of the second amplifying means, the bypass capacitor operating to bypass high frequency signal from outside the microphone and the signal output terminal of the second amplifying means being connected to the microphone output terminal) because at high frequency the capacitor would acts as a short circuit and at low frequency the capacitor acts as a open circuit.

15. Regarding Claim 8, Korner discloses a capacitor type of microphone having a microphone output terminal connected to an output line through which a

microphone signal is outputted, the microphone comprising: a movable electrode (22); a fixed electrode (24) arranged face to face to the movable electrode; first amplification circuit (20); and second amplification circuit (18) cascaded to the first amplification circuit between an output terminal of the first amplification circuit and a microphone output terminal (Fig. 3; column 3, lines 6-15). Korner does not expressly disclose a member for shielding the microphone from electromagnetic waves. However it would have been obvious to one having ordinary skill in the art to provide a member for shielding the microphone comprising the movable electrode, the fixed electrode, the first amplification circuit, and the second amplification circuit in order to avoid external electromagnetic interference as taught by Cote. Cote disclose a capacitor microphones in which a permanently polarized dielectric, or electret, is used requires a local preamplifier circuit because of their low output which must be well shielded to avoid external electromagnetic interference (column 1, lines 6-16; column 1, line 67 to column 2, line 5; column 2, lines 43-68). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Korner with the teaching of Cote to shield the microphone comprising the movable electrode, the fixed electrode, the first amplification circuit, and the second amplification circuit in order to avoid external electromagnetic interference.

Korner as modified does not expressly disclose a bypass capacitor having one end electrically connected to a signal output terminal of the second amplifying circuit and having to the other end electrically connected to a common

output terminal of the second amplifying circuit, the bypass capacitor operating to bypass high frequency signal from outside the microphone and the signal output terminal of the second amplifying circuit being connected to the microphone output terminal. However it would have been obvious to one having ordinary skill in the art to utilize a bypass capacitor across output terminals of the microphone in order to produce an output free of interference because at high frequency the capacitor would acts as a short circuit, which will not allow signals to pass and at low frequency the capacitor acts as a open circuit, which will allow signals to pass, as taught by Halteren. Halteren discloses if high frequency interference signals may be generated, these signals are short-circuited to ground by the capacitive coupling. Thus, the signal that can finally be derived at the output is free of such interference signals (Fig. 1A; column 3, lines 24-41). Therefore it would have been obvious to one having ordinary skill in the art to modify Korner as modified with the teaching of Halteren to utilize a capacitor across the output terminals (Fig. 3) in order to produce a signal free of interference (i.e. a bypass capacitor having one end electrically connected to a signal output terminal of the second amplifying circuit having to the other end electrically connected to a common output terminal of the second amplifying circuit, the bypass capacitor operating to bypass high frequency signal from outside the microphone and the signal output terminal of the second amplifying circuit being connected to the microphone output terminal) because at high frequency the capacitor would acts as a short circuit and at low frequency the capacitor acts as a open circuit.

16. Regarding Claim 3, Korner as modified discloses a capacitor connected to a resistor wherein a resistance is for supplying a driver voltage to the microphone circuit (i.e. power supply to the drive means is configured so that the power is temporarily obtained for storage through the output line connected to the microphone output terminal according to voltage values and the stored voltage is used when obtaining the power is stopped) (abstract; Fig. 3, references 12 and 14).

17. Regarding Claim 4, Korner as modified discloses second amplification circuit (18) might also consist of a field effect transistor (column 2, lines 35-36). Therefore, the second amplification circuit is structured into a gate-common amplification circuit (i.e. the gate is maintained at ac common) (Figs. 3-6), wherein the FET has a source electrode of the FET receiving an output current of the first amplification circuit and current from a drain electrode of the FET passing the microphone output terminal (Fig. 3, references 18 and 20).

18. Regarding Claim 5, Korner as modified discloses second amplification circuit (18) has a junction type of transistor (Fig. 3). Therefore, the second amplification circuit is structured into a base-common amplification circuit, wherein the transistor has an emitter receiving an output current of the first amplification circuit and current from a collector of the transistor passing the microphone output terminal (Fig. 3, references 18 and 20).

19. Claim 6 is essentially similar to Claim 4 and is rejected for the reasons stated above apropos of Claim 4.

20. All elements of Claim 7 are comprehended by Claim 4. Claim 7 is rejected for the reasons stated above apropos to Claim 4. (Fig. 3; column 2, lines 30-45).

21. Regarding Claim 11, Korner discloses a capacitor type of microphone having a microphone output terminal connected to an output line through which a microphone signal is outputted, the microphone comprising: a movable electrode (22); a fixed electrode (24) arranged face to face to the movable electrode; first amplification circuit (20); and second amplification circuit (18) cascaded to the first amplification circuit between an output terminal of the first amplification circuit and a microphone output terminal and formed to have an FET (field effect transistor) of which gate is grounded to form a gate-common transistor circuit (i.e. the gate is maintained at ac common, therefore the gate is grounded to form a gate-common transistor circuit)(Fig. 3; column 2, lines 30-46; column 3, lines 6-15). Korner does not expressly disclose a member for shielding the microphone from electromagnetic waves. However it would have been obvious to one having ordinary skill in the art to provide a member for shielding the microphone comprising the movable electrode, the fixed electrode, the first amplification circuit, and the second amplification circuit in order to avoid external electromagnetic interference as taught by Cote. Cote disclose a capacitor microphones in which a permanently polarized dielectric, or electret, is used requires a local preamplifier circuit because of their low output which must be well shielded to avoid external electromagnetic interference (column 1, lines 6-16; column 1, line 67 to column 2, line 5; column 2, lines 43-68). Therefore it would have been obvious to one having ordinary skill in the art at the time the

invention was made to modify Korner with the teaching of Cote to shield the microphone comprising the movable electrode, the fixed electrode, the first amplification circuit, and the second amplification circuit in order to avoid external electromagnetic interference.

Korner as modified does not expressly disclose a bypass capacitor having one end electrically connected to a signal output terminal of the second amplifying circuit and having to the other end electrically connected to a common output terminal of the second amplifying circuit, the bypass capacitor operating to bypass high frequency signal from outside the microphone and the signal output terminal of the second amplifying circuit being connected to the microphone output terminal. However it would have been obvious to one having ordinary skill in the art to utilize a bypass capacitor across output terminals of the microphone in order to produce an output free of interference because at high frequency the capacitor would acts as a short circuit, which will not allow signals to pass and at low frequency the capacitor acts as a open circuit, which will allow signals to pass, as taught by Halteren. Halteren discloses if high frequency interference signals may be generated, these signals are short-circuited to ground by the capacitive coupling. Thus, the signal that can finally be derived at the output is free of such interference signals (Fig. 1A; column 3, lines 24-41). Therefore it would have been obvious to one having ordinary skill in the art to modify Korner as modified with the teaching of Halteren to utilize a capacitor across the output terminals (Fig. 3) in order to produce a signal free of interference (i.e. a bypass capacitor having one end electrically connected to a signal output terminal of the

second amplifying circuit having to the other end electrically connected to a common output terminal of the second amplifying circuit, the bypass capacitor operating to bypass high frequency signal from outside the microphone and the signal output terminal of the second amplifying circuit being connected to the microphone output terminal) because at high frequency the capacitor would acts as a short circuit and at low frequency the capacitor acts as a open circuit.

Response to Arguments

22. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corey P. Chau whose telephone number is (571)272-7514. The examiner can normally be reached on Monday - Friday 9:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tran Sinh can be reached on (571)272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

May 25, 2005

XU MEI
PRIMARY EXAMINER